Vol. No. 3 ---Comments Harald D. Frederiksen

Chapter 4 Changes of Delta Conveyances – An Incomplete History

The 'History' omits some of the most important background on the Delta Conveyances as was set forth in the DWR Bulletin No. 3 *The California Water Plan* the basis for State Water project (SWP) services and the basis of cost recovery from the water contract agencies. A second document is DWR Bulletin *DELTA ATLAS Sacramento San Joaquin;* A brief summary in place of the existing statements will allow the legislature and readers to better understand the State's earlier legislation and analyses pertaining to today's basic issues.

A summary: In 1947, the California legislature authorized and funded an intensive ten-year statewide effort that culminated in Bulletin No. 3, The State Water Plan, 1957. The document described California's urgently needed water management actions, services, potential sources of supply, a list of identified infrastructure and suggested financing vehicles. Bulletin #3 was the basis for the subsequent statewide vote on the SWP and the 1960 Burns Porter Bond Act. A joint conveyance facility for the SWP and USBR to pass Sacramento River water to the export pumping plants in the south-eastern edge of the Delta was to be proportionately funded.

Several options for routing water across the Delta were studied by DWR and USBR leading to their adoption the Peripheral Canal (PC) in 1964 with the strong support of DFW. DWR placed an engineer responsible for launching the project joined by a DFW member Bob Jones, Deputy Director of that agency.

Bob Jones, representing DFW, was a strong supporter of the PC because of the capability it provided to make controlled releases of the Delta water quantity allocation into the appropriate natural streams that would be crossed by the PC. This flexibility would allow the best flow pattern in the Delta under all conditions. (He subsequently drafted the California's first Environmental Law.) As will be noted, in 1980, the State Legislature passed Senate Bill 200 specifying the Peripheral Canal as the Delta water transfer facility and Gov. Brown added his support in 1982.

The sequence of events in the late 1970s pertaining to the construction of the SWP / USBR Delta PC conveyance facility reflected the political pressures of the time.

By administrative action in the late 1970s, Governor Jerry Brown halted work on the PC in response to campaigns by environmental groups.

Nevertheless, In 1973, the Delta Environmental Advisory Committee (DEAC) concluded that a federal – State Peripheral Canal, properly designed and operated, is necessary to protect the Delta.

In 1980, the State Legislature passed Senate Bill 200 specifying the Peripheral Canal as the Delta water transfer facility, requiring staged construction and fish screen testing but without requiring federal participation.

In 1982 after no satisfactory options to the PC were found, Governor Brown sought to change course and move forward with the PC.

In 1982, voters defeated Proposition 9 that included the construction of the Peripheral Canal.

Chapter 5 Water Use Efficiency in Agriculture

Comment 5-1 Chapter 5 calls for a wide-ranging DWR program to educate California's farmers on irrigation. Obvously, DWR seems to not be aware of the many years of experience and the range of information from the government, grower-organizations and equipment venders utilized by farmers to remain current when reaching their annual decisions on crop production. It would be far better to seek additional State funding for the research / extension universities, if there is a need.

Actually, with water the limiting resources for essentially all farmers they are fully knowledgeable of how best to manage their water resources. See the findings of Fresno State University (UC Davis, Fresno State *Agricultural Water Use in California: A 2011 Update*) Some farmers' additional sources of information are listed;

1) State and USDA research stations and extension services with active field agents with several California universities direct engaged in the programs, particularly the three engaged in research.

2) Universities that offer frequent seminars and in-depth formal training sessions in irrigated agriculture ; (Cal Poly)

3) Almond Growers Association

4) Winegrowers associations (several)

5 Cotton Growers Association

6) Walnut Growers Association

7) California Cattlemen's Association

8) California Irrigation Districts Association

9) Venders of every category of irrigation equipment provide literature and education session at these Associations' meetings.

Individual farmers have $millions invested in their farm assets. They are for-profit businesses.

Chapter 5-2 Some 2013Update plan references used in the Plan conclusions on the availability of uncommitted water supply in California.

Three papers were cited authored by the Pacific Institute (PI). The 2009 –paper claimed water savings of 5.5 maf in average years and 5.9 maf in dry years. Another

report in 2005 claimed a savings of 5 maf. In 2011 PI claimed that water efficiency had been improved with 'quantification'. There are no such quantities of water available. The resulting PI findings are not based on sound hydrological analysis. For example, the analyses assume that 'return flows' are available for new uses when in fact all return flows in California to streams and groundwater are fully committed to existing downstream water rights holders or the recharge to over-pumped aquifers. The alleged increase in 'water savings' by farmers during droughts are caused by court restrictions on irrigators or established priorities of water service entities.

A report by Canessa P, Green S, Zoldoske D. 2011 *Agricultural Water Use in California: A 2011 Update.* Fresno (CA): Center for Irrigation Technology California State University, Fresno. 80 pp. may be viewed online at:

http;//www.californiawater.org/docs/CIT_AWU_Report_v2.pdf. This updates the prior report published by the University of California Davis. Findings include:

"Claims that California farmers are wasteful and inefficient when it comes to managing their water supplies are inaccurate. Despite assertions by some, large volumes of "new water" available through agricultural water conservation do not exist.

• The estimated potential new water from agricultural water use efficiency is 1.3 percent of the current amount used by the state's farmers – about 330,000 acre-feet per year (at funding level PL-5 of the Department of Water Resources latest California Water Plan Update 2009). That represents about 0.5 percent of California's total water use of 62.66 million acre-feet.

• Groundwater overdraft of about 2 million acre-feet per year continues to be a serious problem in certain regions of California because of inconsistent and uncertain surface water supplies.

• Changes in irrigation practices, such as switching from flood irrigation to drip, have the effect of rerouting flows within a region (or basin) but generally do not create new water outside of the basin."

Comment 5-3 How can the 2013 Update based on these four investigations and the farmers ongoing attention to irrigation practices state that DWR has found that; "There is no doubt that agricultural water use efficiency can still be improved by continuing current trends such as improving irrigation efficiency, adopting drip and micro irrigation, adopting reduced deficit irrigation, selecting water efficient crops, etc.? " What can be DWR's reason for not using the report on agricultural efficiencies of the two leading agricultural / irrigation Universities of California??

Such off-the-cuff statements won't create any confidence in the DWR's assessment of the State's water supply. In that regard, I haven't found any positive suggestions for increasing water supply with scheduled actions of (a) desalination and (b) the required (not just suggested) recycling of effluent by the coastal urban area. California's internal cities already are required to treat waste to make them suitable for reuse. I did see some generalized discussions but with little specific results.

Comment 5-4 The above cited literature is in adequate for devising a five-year water management plan. The omission of several recent and historic DWR documents were noted earlier – particularly Bulletin No. 3, "The California Water Plan. May 1957, and the "Delta Atlas Sacramento – San Joaquin" 1993. It is obvious that limited DWR literature search in the areas of water resources management, data, practices and findings was inadequate. Some example reports on water resources management that should have been included in the DWR literature search include:

1. DWR Plan Update – 2009 and prior.

2. United States Geological Survey [USGS], 1988. Estimated use by offsteam activities of water in the United States in 1985. Reston, VA: USGS, Circular 1004. (These show diversion, consumptive use and return flows for all classes of offstream USA water use. (The five-year USGS reports of data collected later has not been published because of US Congressional budget cuts – this decision in spite of Climate change.)

4. United States Geological Survey [USGS], 2009. Groundwater availability of the Central Valley Aquifer, California. Reston, VA: USGS, Professional Paper 1766.

END Harald Frederiksen 11/15/2013